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# Worldwide Report

TELECOMMUNICATIONS POLICY,  
RESEARCH AND DEVELOPMENT

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9 April 1984

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TELECOMMUNICATIONS POLICY, RESEARCH AND DEVELOPMENT**

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AUSTRALIA

MINISTER GIVES DETAILS OF DOMESTIC SATELLITE

Sydney THE AUSTRALIAN in English 20 Feb 84 p 13

[Text] The federal government has chosen the transmission system already used for terrestrial television broadcasting, to extend ABC [Australian Broadcasting Corporation] services to remote and poorly served communities via the domestic satellite system, AUSSAT. The minister for communications, Mr Duffy, said the long lead times needed for planning and manufacture, and the complexity of the undertaking, had forced an early decision on the transmission system. He said the initial choice of PAL, as the system is known, did not preclude later modifications to the standard to allow for more advanced systems now being developed overseas. "I was particularly concerned that the satellite service to be provided by the ABC, the Homestead and Community Broadcasting Satellite Service (HACBSS), should be based on established technology compatible with Australia's existing household receivers," he said.

The government had acknowledged that more advanced transmission technologies, such as some variant of the widely publicised Multiplexed Analogue Component (MAC), would offer technical advantages over PAL. Mr Duffy said his department was preparing for the modification of domestic earth stations at low cost to handle the MAC television signals if required. The HACBSS service, due towards the end of 1985 following the launch of the satellite, will extend one television service and at least two radio services to 300,000 people in outback areas. It will also make it possible to distribute the same services to its regional stations via AUSSAT.

The government has also decided to accommodate the ABC radio service to be broadcast via the satellite, which will be accommodated alongside the television service, but on separate carriers. Mr Duffy said this would enable the ABC to link sound programs to the satellite for broadcasting separately from the TV service. Separate ABC service for the four satellite zones would be possible.

Most communities and homesteads wanting to receive ABC services via HACBSS would need an earth station costing about \$1000. They would need a dish antenna and a down converter to receive the super-high-frequency television and radio signals and feed them through an indoor unit to standard domestic television and FM receiver. The typical diameter of an earth station dish should be 1.2m for good-quality radio and television reception. Only extremely heavy rainfall would interfere with this.

CSO: 5500/4374

ARTICLE VIEWS SATELLITE PROGRAM FAILURES

Brisbane THE COURIER MAIL in English 9 Feb 84 p 5

[Article by James Crown: "Australia Losing the Satellite Race"]

[Text]

**T**HE question must be asked — how can India have three operational communications satellites in space and Indonesia have four — one of which is lost — while Australia has none?

Australia continues to argue about control and cost while countries — often considered technologically inferior — make use of advanced space technology and, in India's case, their own launch rockets.

The failure of Australia to get off the launch pad was highlighted this week as Indonesia sent into space the latest of its satellites aboard the space shuttle Challenger, now circling the earth.

The fact the Indonesian satellite, like the Western Union satellite launched the day before, failed to achieve its orbit, does not disguise the fact that Australia is far behind.

After two years of research, the Federal Government announced in October 1979 its decision to establish an Australian communication satellite system.

We will launch our first two satellites in July and October of next year. We are paying the US Government \$37 million to

use the shuttle. The shuttle will lift our satellites — each 6.6 m by 2.2 m, garbage bin-like cylinders — 250 km above the earth. Rockets will then be fired to push the satellites out to a height of 36,000 km where they will be "parked" in geo-stationary orbits.



Our satellites are designed to provide radio, television and communications services for remote parts of Australia, and improve reception in country areas to a degree comparable with that in urban areas.

An Australian astronaut is likely to ride in the shuttle during one of our two missions. The cost of training two Australians — only one of whom will actually go into space — is about \$700,000.

The Challenger shuttle, the 10th shuttle flight, launched two satellites on its current space mission. Both failed to achieve the high orbits needed to carry out their earth-missions.

Indonesia's 3300 kg Palapa-B2 satellite, worth about \$100 million, and a similar satellite, worth \$75 million, launched for Western Union, are two failures after 18 successful space firings.

Both failures have been linked to faults in their rocket

motors.

Palapa-B2 was to have provided backup for Palapa-B1, which was launched last year on the seventh shuttle mission.

The B-series satellites were designed to take over from Palapa A-1 and A-2, which were launched in the mid-1970s and are nearing the end of their useful lives.

They will add to the communications network that serves Indonesia's vast archipelago, and which will eventually extend to the Philippines, Thailand, Malaysia, Singapore and Papua New Guinea. Palapa was built by Hughes Communications International of Los Angeles.

The Indonesian Government labelled the failure of Palapa-B2 "a major disappointment", but the general manager of our Commonwealth-owned satellite company, Aussat Pty Ltd, Graham Gosewinckel, said after the failure that he was sure the problems would be sorted out by the time Aussat was launched.

Gosewinckel had already been briefed by Hughes Communications on what its technicians think might have gone wrong with the errant satellites.

In April 1983, India put a satellite into orbit from its home soil, riding an Indian rocket, for the third time since joining the space club in late 1980.

Prime Minister Indira Gandhi said the satellites had proven themselves, and would be followed by a higher investment in India's space research program.



But what about Australia's space effort? Next week Aussat, formed in 1981 and the focus during the last two years of bitter political and corporate battles, starts its hard sell.

More than 400 representatives of Australian business will gather in Sydney to be given the

much-delayed details of the costs and conditions of using Aussat.

In 1982 the Australian Government announced that Hughes had won the \$166 million contract to build three satellites and two ground control systems.

Associated contracts for Australian companies were estimated to be worth more than \$120 million. Over the years the cost of our satellite program has seen many estimates — mostly around \$425 million. By 1986, about 300 employees will be working on the satellite network.

Beside Canberra's cautious approach to satellites, there has also been considerable noise generated by some trade unions.

Most notable for its objections has been the 26,000-member Australian Telcommunications Employees' Union which says taxpayers will have to subsidise Aussat by \$900 million during the next seven years.

The ATEA has long been critical of the satellites and says that if they must be launched, they should be wholly controlled by Telecom.

The ATEA also says the satellites would ruin many rural communities financially, provide second-class telephone services, increase rural unemployment and mean higher telephone charges. ATEA estimates of Aussat's costs claim that between 1983 and 1992 costs will exceed revenues by \$459 million.

Gosewinckel says the ATEA claims are misleading. And estimates of the cost of following ATEA's advice and stopping the project exceed \$150 million.

The government decided in November last year to retain Aussat as a separate Commonwealth-owned company to own and manage our satellite system as a fully self-contained tax-paying operation.

**Aussat controls 75 percent of the system and wields most of the power on decisions about its use by private enterprise. That November decision reversed a May 1983 mini-budget announcement by the government that 49 percent of Aussat would be sold to private enterprise.**

The Minister for Communications, Michael Duffy, dismissed the about-face on selling 49 percent of Aussat's equity by saying the earlier decision has been taken "in the context of a severe deficit".



The government worry — and a worry expressed by interested unions — was that the introduction of private equity capital would have changed the character of Aussat with directors representing private sector shareholders expected to act in the best interests of the company, which at times might not necessarily be in the public interest.

**But back to the first question. How can Indonesia and India, both developing nations, be so far ahead of developed Australia in the use of space communications technology?**

The answer, of course, lies with authoritarianism and the way things are done in differing political systems.

In Indonesia, only a small group of technicians and scien-

tists, and an even smaller group of political leaders are involved in the satellite decision-making.

These small groups make decisions faster than our bureaucracy-ridden study groups and there is virtually no public discussion — and hence little dissent — on such expenditures of public money in India and Indonesia. There is also little political opposition to slow down the necessary legislation.

In Australia there has been major wrangling over costs, control and usage, over private versus public ownership and continuous debate by a generally well informed public about the high cost of moving into space technology.

But our launch into satellite communications is now getting closer. Aussat has acquired two pieces of land for its major earth control station. One station is to be built in the northern Sydney suburb of Belrose and a second will be sited in the Perth eastern suburb of Lockridge.

And there is some advantage in taking our time. It might have been Australia's satellite that left Challenger this week, failed to achieve its desired orbit and is now a useless piece of junk littering space. As Gosewinckel says, it would be nice to be in space now, but next year even more of the bugs will be worked out of the systems. At \$50 to \$100 million a shot, the fewer bugs the better.

CSO: 5500/4373

## HONG KONG

### REVIEW OF ADVANCES IN HONG KONG TELEPHONE, C&W SERVICES

Hong Kong SOUTH CHINA MORNING POST in English 28 Feb 84 Telecommunications  
Supplement p 1

[Text] The world of telecommunications has changed so much--and so fast--that no expert can honestly say what is new. With the proliferation of newfound or newfangled devices, what is modern soon becomes obsolescent.

Even the very field itself, once confined to cable or telegraphic, radio, telephone and television communications, has largely broadened in recent years which have witnessed technological advances and breakthroughs that were once dreams and theories.

Being a major telecommunications centre in Asia, Hongkong has chalked up many a first in this realm too. Spearheading the drive towards the latest developments and new horizons are Hongkong Telephone and Cable and Wireless.

Without reservation, the territory can pride itself on having four satellite earth station antennae at a single site--Stanley--following the addition of two dish-shaped aerials which can transmit or receive radio waves covering 47 countries.

Satellite communication has been available to Hongkong since 1969 through International Telecommunications Satellite Organisation (Intelsat) which serves 170 countries through more than 15 satellites. Thus local television viewers are often accorded with live coverage of big events that range from politics and economics to entertainment and culture.

Hongkong has entered the age of electronic mail service with the introduction of Intelpost--a high-speed facsimile transmission service to 60 centres in the United Kingdom.

Through this service initiated by Cable and Wireless, facsimile copies of documents can be delivered to addresses in the UK within a few hours. It can also be used for sending letters and greetings to relative and friends.

Thanks to Hongkong Telephone's Viewdata system, it has its own version of electronic telephone directory. It is certainly ahead of Paris which is currently experimenting with an electronic telephone directory linked to a computer terminal that resembles an eight-inch TV set with a keyboard.

Nevertheless, the French system is more sophisticated. A subscriber merely types the No 11 and keys in a name, house number, street and city.

In a flash, the telephone number is traced by the device called Teletel which also offers information on stock quotations, shopping catalogues, airline and railway schedules, daily news and movies in town.

Early this year, Hongkong Telephone created history again with the launching of the first International Direct Dialling (IDD) public payphones operated by stored value cards instead of coins. It is also the first of its kind in Southeast Asia and, as the demand grows, the company plans to instal 100 cardphones in the territory.

Lately, the IDD list has been lengthened; it covers 120 countries, including Gambia, Mauritius and Tonga. This development is in line with Hongkong Telephone's long-term commitment with the intention of providing better telecommunications services that are second to none.

In fact, the company has budgeted nearly \$5 billion for the next five years which will see new developments in the field. Last year, it injected \$750 million investment in improved services and ongoing development projects.

With 1.5 million telephone lines--or one line for every 3.6 users--Hongkong can proudly assert that it is one of the very few countries in Asia where subscribers' needs are pre-determined and telephone lines are installed before building occupation.

In other areas, it has further made headway with the introduction of services which have placed the world of information at our fingertips.

City Business System, Viewdata's Financial Vision, Datel Message Service and Mobil radio telephone service are just some of them.

Bateway, a system linked to Viewdata with unlimited functions, will surely change banking transfer procedures. Vitel, an automatic telex communication system with transmission of messages to as many as 12 telex lines, is another innovation.

LM Ericsson of Sweden is already developing a highly sophisticated teletex system known as Eritex which is able to transmit whole pages of text in seconds. This invention which is likely to overtake normal telex service in the next five years will be a boon to subscribers and a challenge to Cable and Wireless which nets an annual revenue of \$400 million from telex traffic.

In regional telecommunications co-operation and joint ventures with China, Hongkong has also played an active role. Last October, Cable and Wireless completed a new microwave communication System for Guangdong Posts and Telecommunications Administrative Bureau, providing 2,700 telephone lines.

Plans are also afoot for Cable and Wireless to improve telephone services in Shumchun under a US\$180 million scheme in which the latest digital telephone technology will be used to provide 1,500 telephone lines by next year.

Hongkong is also involved in the installation of a 2,500 nautical mile submarine cable system linking it with Australia, Indonesia and Singapore.

Undoubtedly, its new telecommunications "brain" is Hermes House, a \$500 million facility in Kowloon to house Hongkong's second international telephone exchange and an international computer-operated message switching and testing centre.

But telecommunications will never be the same as scientists continue to peer deeper into the microchip and biochip, farther into the cosmos and beyond conventional gadgets.

Indeed, space technology is to reshape the telecommunications sphere in many ways and areas that were once considered inaccessible or impossible.

Yet Columbia's crew of six have proven that earthlings in space could collaborate with scientists in Houston via television in a variety of experiments as the space shuttle travelled more than four million miles, zapping the ionosphere with electron beams, pointing ultra-violot and X-ray telescopes at the sky and infra-red sensors at the Earth and sending radar images of other galaxies.

Even astronomers are benefiting from space telecommunications. The infra-red astronomy satellite (IRA), for instance, has revealed a universe which, until now, has been invisible to scientists. Now 350 million bits of information could pour down from the satellite into a 40-foot radio antenna at Chilton, England, before they are fed into computers daily.

To probe the unknown deeper, the US National Aeronautics and Space Administration is building a more powerful infra-red telescope--Shuttle Infra-Red Telescope Facility--for 1986 launching.

Such inventions and future discoveries will pave the way for telecommunications of tomorrow. Spacelab I, packed with highly sensitive instruments and nestled in the cargo bay of Columbia, has already demonstrated that its computers could beam back on Earth two trillion bits of scientific data.

Who has heard of tele-conference until it was launched by Digital Equipment Corporation, and the last meeting was held last May between the USA and Hongkong.

Entailing tracking system, signal-carried technical support and special telephone arrangements, teleconferences have enabled businessmen to discuss new products and industry developments with customers in hotels or offices spread over 14 time zones.

This may be news to a layman used to pushing buttons, dialling telephone numbers and complaining whenever there is a breakdown.

And in reply to such a complaint, the Hongkong Telephone Managing Director, Mr F. L. Walker, has retorted: "What is 'modern' today will become 'old' in turn."--L.S. YEOW

CSO: 5500/7517

CABLE AND WIRELESS INVOLVEMENT WITH TELCO DESCRIBED

Hong Kong SOUTH CHINA MORNING POST in English 11 Feb 84 Business News p 2

[Article by Financial Editor Michael Blendell]

[Excerpts] This week's general offer for Hongkong Telephone from Cable and Wireless PLC took both the company and the stock markets by surprise even though the UK-based telecommunications giant already held just under 35 per cent of the monopoly operator of the domestic telephone line service.

Funding for the Telco bid will further impact on profits and, ironically, it is more than probable that Hongkong--and the ultimately increasing profit contribution therefrom--will in turn impact on the company's price/earnings ratio as the intrinsic political instability here tends to be overplayed in the UK.

On the other hand, Cable and Wireless' increased equity in Telco must pay off in the long run as, not only does it remove any arguments over the bottom line, it must also allow a great deal of rationalisation--as distinct from competition--in technological advances in the telecommunications field when applied to the Far East and China.

Another sanguine spin-off from the Telco bid could stem from better marketing as Cable and Wireless has, in the past, been a much more aggressive marketer than Telco.

Which implies that it might be a more forceful negotiator with the Hongkong Government when it comes to possible changes in the rules governing Telco's payout under its Scheme of Control which limits the post-tax return on shareholders' funds to 16 per cent if not to the Telephone Ordinance itself.

The UK counter presently sells on a price/earnings (p/e) ratio of about 13 times (against the 12.8 times implicit in Cable and Wireless' general offer for Telco) but its yield is about as unimpressive as Telco's lowly return.

But--given its track record and its proven expertise in adapting new technology quickly and efficiently to the needs of its customers, its ability to compete so successfully, and its aggressive marketing techniques--its long-term earnings potential suggests that the p/e is anything but extravagant.

And, from a Hongkong investor's point of view, with so much of its pre-tax earnings based right here and in the immediate region, it is much the same as investing in a local counter.

That leaves the 80 per cent-owned Cable and Wireless (Hongkong) which might logically end up by being backed into Telco.

Certainly, its much-vaunted public flotation is not going to materialise now as it would be superfluous for Cable and Wireless to have two listed arms in Hongkong, despite its continued highly successful expansion in the territory.

As for the Hongkong Government's 20 per cent equity in Cable and Wireless (Hongkong) that too seems obsolete as the Government can always legislate against the telecommunications giant if necessary.

Additionally, it might be glad to sell out its stake at the moment given contemporary budgetary restraints because of relatively large deficits (and more in the pipeline?) over the last couple of years.

CSO: 5500/7517

TECHNOLOGICAL ADVANCES IN TV PLANNED BY REVIEW BOARD

Hong Kong SOUTH CHINA MORNING POST in English 29 Feb 84 p 10

[Text] The role of television after 1997 will still largely be the same as now--to entertain the public. But much more emphasis will be given to informing the people.

This is the view of Mr Justice Power, chairman of a newly appointed 16-member broadcasting review board.

"It will still retain its entertaining functions while enlarging its education function," Mr Justice Power said yesterday.

"For Hongkong should be going on as a stable and prosperous community through 1997 and the next century."

The board, which is to examine all aspects of broadcasting in the territory, is expected to complete a report by summer next year upon which the Government can prepare an overall policy.

Top items of the board's agenda included the study on the needs of the people of Hongkong, projection on technological advancement, local manpower and resources, and the role of the Government, Mr Justice Power said.

Moreover, he said, attention would also be directed towards licensing, advertising and censorship. But he added that sweeping changes are unlikely.

The controversial proposed ban--total or partial--on cigarette advertising on television would also be studied.

On the subject of licensing, Mr Justice Power said the board will scrutinise any need for changes in the tendering procedures for the new licences which will be awarded in 1988 for television, and in 1989 for sound broadcasting.

He said it is both possible for Hongkong to have a third television station and a cable television.

A budget of \$400,000 has been designed for the board's research material and members' travel expenses while \$1 million has been set aside as fees for consultants to be hired.

CSO: 5500/7517

HONG KONG

BRIEFS

TELCO COMPUTERIZATION--Communication Services Ltd, a subsidiary of the Hong-kong Telephone Co. will place emphasis on computer-based communications products for business applications this year. Its marketing manager, Mr A. F. M. Conway, told a Rotary Club Hongkong Island East lunch that computerised branch telephone exchanges would be introduced soon. Hongkong Telephone will also conduct a pilot testing of a public data packet switch network for local and international switching of information, he added. Mr Conway said fibre optics are facilitating the integration of products, such as photo copiers and facsimile machines, into the communications network. Low-cost terminals will soon be available for both the office and the home. Over the next few years computers will become far more sophisticated in the area of human speech systems, he said, and will be able to give an automated speech response to instructions. Advances like automated speech response and electronic mail will soon supercede the telex and conventional mail. On the problem of privacy in computers and communications, he said: "There is no such thing as a completely secure computer system, but there are techniques to control or limit threats to computer security." [Text] [Hong Kong SOUTH CHINA MORNING POST in English 23 Feb 84 Business News p 3]

CSO: 5500/7517

ERICSSON WINS CONTRACT FOR NATIONWIDE AUTOMATED PHONE NET

Stockholm SVENSKA DAGBLADET in Swedish 17 Feb 84 p 1

[Article by Bo Ostlund]

[Text] The first nationwide, wholly automated telecommunications network in Malaysia will be Swedish made. Ericsson Radio Systems has been hired to construct the network, which will utilize automobile telephones. The order totals 170 million kronor.

This will be the first nationwide automobile telephone system in the far east.

Malaysia chose automobile telephones instead of a conventional telephone system because it would be impossible to string telephone lines across the country's wilderness. The islands are covered with impenetrable jungles and radiotelephony is the only means of communication.

As a result, Malaysia chose the mobile telephone system.

Eight Competitors

Ericsson Radio was given the order following competition with eight other manufacturers. In the end, Ericsson edged out a Japanese competitor in some tough competition.

The initial stage involves 170 million Swedish kronor. This phase involves 954 radio base station channels with 86 base stations. This includes, among other things, five AXE-10 stations whose computers will act as the system's brain to help keep up with where the mobile customers are in the nationwide system.

Ericsson Radio estimates that the deal will mean about 50,000 mobile units in 10 years.

Ericsson Radio now has automobile telephone systems in 12 countries.

'Deal Worth Billions'

Ake Lundqvist, executive vice president of Ericsson Radio, told SVENSKA DAGBLADET:

"You might say that we are at the beginning of what may become a deal worth billions. We believe there are potential sales of 50,000 mobile units within 10 years."

9336

CSO: 5500/2607

WELLINGTON PLANS ANTARCTIC SATELLITE STATION

Wellington THE EVENING POST in English 22 Feb 84 p 32

[Text]

A world first — a satellite earth station in the Antarctic — could be on for New Zealand.

Post Office engineers and the Department of Scientific and Industrial Research staff recently returned from the ice after conducting tests on the feasibility of setting up a station. Results are now being analysed, and a report is expected to be published by the DSIR in April or May.

"It looks like it's on," said a Post Office official, referring to the results so far.

Even if it is feasible a world-wide tender for the job would probably realise only half a dozen companies able to do the job, say officials. Whether any of these could do a cost-effective job was another matter.

The present public telephone link serving Scott Base and McMurdo provides one telephone and one telegraph circuit. The harsh climate and vast distance to be covered — 3700km — mean only high-frequency radio or satellite communications can be

used to improve services.

High-frequency radio, the same as short-wave radio, is prone to atmospheric interference, with communications losses lasting from a few minutes to a few days. These, together with an increasing demand for reliable services, highlight the need for a satellite station.

A satellite service would not only be able to cope with telephone demand, but could provide visual data. This would improve the transfer of scientific information and could bring direct television broadcasts.

Continuous communications via satellite would also improve air traffic control on the ice as contact would be kept with aircraft all the way south from Christchurch.

If a station were set up, the Post Office could find it paying its way serving other countries on the ice.

"We would certainly be keen to maximise use and keep up revenue," said the assistant engineer-in-chief (operations), Mr Lance McKechie.

CSO: 5500/4375

PEOPLE'S REPUBLIC OF CHINA

FIRST OPTICAL FIBER TELEPHONE EQUIPMENT OPERATIONAL

OW181259 Beijing XINHUA Domestic Service in Chinese 0832 GMT 15 Mar 84

[By reporter Ma Kuijun]

[Text] Tianjin, 15 Mar (XINHUA) -- A set of optical fiber [guang dao xian wei 0342 1418 4960 4850] communication equipment which requires no relay station -- the first in China -- was put into operation 13 March in the Tianjin Municipality telephone network.

Optical fiber communication is a new technology. Two optical fibers can allow 480 telephone circuits to function at the same time with clarity and no mutual interference. Optical fibers are lighter in weight than the currently used metal telephone wires and are easier to install and repair.

The optical fiber communication equipment was completely designed, produced, and installed domestically. It is 7 km long and has no relay station midway to boost the sound volume. All performance norms are up to design standards.

The use of optical fiber communication has opened up a new way for future development of computer data networks, picture receiving networks, picturephones, and other modern telecommunications.

CSO: 5500/4179

PEOPLE'S REPUBLIC OF CHINA

BRIEFS

BROADCASTING FORUM ON MICROWAVE WORK--From 8 to 10 February, the provincial Broadcasting and Television Department held a conference in Dongguan on the microwave work in eastern Guangdong. Present at the conference were the responsible persons of all the prefectural and city broadcasting and televisions bureaus and television relay stations and the directors of the microwave stations. The conference summarized eastern Guangdong's experience in building the microwave channel, elected nine advanced individuals and units, including the Dongguan microwave station, formulated a system for controlling the microwave channel in eastern Guangdong, and ascertained a system of personal responsibility for the post of operators and various control systems. The delegates present at the conference expressed their desire to make a success of the construction and control of Guangdong's first microwave channel in order to enable the 18 million people in eastern Guangdong and some people in Jiangxi and Fujian to listen to and watch clear broadcasting and television programs. [Text] [HK131121 Guangzhou Guangdong Provincial Service in Mandarin 1100 GMT 12 Mar 84]

GUANGZHOU, HARBIN OPTICAL TELEPHONE CABLE--Beijing, 21 March (XINHUA)--Optical fiber cable, a new material used in communications systems, will be installed in the urban telephone networks of both Guangzhou and Harbin, according to the Ministry of Posts and Telecommunications. An optical fiber cable has about 100 times as many channels as an ordinary cable. The advantages are smaller size, much higher information capacity and immunity to electromagnetic interference. Optical fiber cables require fewer repeater station along the transmission route. China started to develop optical fiber transmission systems in the early 1970's. In September 1979 China's first experimental optical fiber cable, 1.8 kilometers long, was installed in Shanghai. One month later, a 3.3-kilometer cable was installed in Beijing. The two cables have been in trial operation for over 50 months and are in perfect condition. A 13.3-kilometer optical fiber cable, the longest in China at present, was installed in Wuhan last October and greatly improved the telephone communication quality in Hubei Province's triple city. In mid-March, a seven-kilometer-long optical fiber transmission system capable of accommodating 480 channels, was put into operation in the port-city of Tianjin. During this period, Nanjing and Guilin also applied this technology to their urban telephone networks. China now produces equipment for optical transmission systems including multiple moded optical fiber cables, photoelectric devices and test meters. [Text] [OW211150 Beijing XINHUA in English 1131 GMT 21 Mar 84]

MEXICO

SATELLITE TRACKING STATION AT IZTAPALAPA

Mexico City EXCELSIOR in Spanish 17 Jan 84 pp 5-A, 16-A

TexE Engineer Javier Jimenez Espriu, undersecretary of communications and technological development, reported that the control and tracking station of the Morelos System satellites, which will be launched into space in 1985, will be installed in Iztapalapa this year with the use of domestic technology.

He said that the Tulancingo I and II stations, in whose area another station will be set up, will also be modernized because a system such as we will have, he explained, should have two control stations to avoid the risk of a single-station failure. This backup station will be designed, built and installed by native personnel of the Mexican Institute of Communications and workers of the General Telecommunications Directorate.

Engineer Jimenez Espriu added that the special projects unit of the Communications Undersecretariat continues to work on the design of the Morelos System satellites, which will be launched into space to an altitude of 36,000 kilometers in 1985.

The undersecretary of communications and technological development said that Telefonos de Mexico will continue the program that was started this year to install party-line telephones--that is, instruments that can serve two or three customers at the same time--to provide service to low-income people, and it will also proceed with an extensive program of public telephone booths. The rural telephone program will be continued. The SCT Secretariat of Communications and Transportation will set up the equipment for 200 communities, and Mexican Telephone will do the same for another 300.

We still start a pilot program this year, he said, to provide telephonic communication via satellite to three or four rural communities.

He commented that this year, Mexican Telephones is striving to install more than 500,000 new instruments and to string about 300,000 telephone lines, half of which will be of the modern digital technology, making it possible to provide new services for the benefit of the users.

8414  
CSO: 5500/2032

MINISTER TALKS ON TELECOMMUNICATIONS DEVELOPMENT

Dhaka THE BANGLADESH TIMES in English 24 Feb 84 pp 1, 8

[Text] Rear Admiral M. A. Khan, DCMLA and Minister for Communications, on Thursday inaugurated the Communication Maintenance Fortnight at the Telephone Bhaban emphasising the need for proper maintenance and utilisation of telephone machinery and its equipment with allied accessories.

Speaking on the occasion, the Communication Minister said that Government had undertaken an extensive telecommunication development programme connecting Dhaka, Narayanganj and Chittagong cities with digital dialling system. He said there were 66,000 telephone connections in the city at present which was 25 per cent higher than the previous year. He said the rate of out of order telephone during the last two years was 25 per 1,000 and now it had been reduced to five per one thousand.

Referring to the performances of the T and T Department the Minister said that the revenue earning of the Department had substantially increased. The revenue earning in 1980-81 was Taka 80 crore but it will reach over Taka 140 crore during 1983-84, he hoped.

Admiral Khan said that T and T Department was a service-oriented organisation and so it should its customs properly by facilitating them with more dependable communication systems.

Emphasising the need for proper maintenance and utilisation of the telephone machinery, Rear Admiral M. A. Khan said that it was the responsibility of each and every employee of the department to properly maintain and utilise telephone machinery to the benefit of its customers.

The function was also addressed, among others, by Mr M. A. Rashid, Secretary, Post, Telephone and Telegraphs Division, Ministry of Communications, Mr A.H.M. Nurul Huda, Chairman, T and T Board and Mr Abul Kashem, General Manager, DTR.

Later, the DCMLA visited the Dhaka Central Telephone Exchange and instructed to appoint women in the vacant posts of operators. He said that following the appointment of women operators the daily earnings of the T and T had increased by Taka one lakh and fifty thousand.

CSO: 5500/7112

INDIA

GENERAL DISCUSSES NEW ARMY TELEPHONE SYSTEM

Calcutta THE STATESMAN in English 15 Feb 84 p 7

[Text] A "Computer-controlled telephone system based on radio relay" would soon be introduced in the Indian Army, Major-General D. B. Lahiri, Chief Signal Officer of Eastern Command, said in Calcutta on Monday. One of the most sophisticated means of military communication available anywhere in the world, it had been developed indigenously by Indian engineers, he added.

The General said that the uniqueness of the system was that it would be very difficult for the enemy either to intercept messages or jam the system. The essence of the system was that there would be a number of alternative channels of communication between any two places and if one of the channels was either jammed or intercepted, it would be possible to switch to an alternative channel immediately. Computers would help quick selection of channels.

He said security devices had been incorporated in the system to prevent interception by the enemy. The devices were electronic means he said, but did not disclose details. The system had been developed by the research and development establishments of the Army. It would be possible to integrate both mobile and static formations of the Army into the system. The General said that a number of armies in the world were experimenting with similar systems for communication, but nowhere in the world had it been incorporated on such a large-scale as the Indian Army planned to do.

Asked if it would be possible to incorporate the new system on board aircraft, the General said that the Air Force was responsible for its own communication. But, so far as combined operations of the Army and the Air Force were concerned, efforts would be made to integrate more sophisticated equipment into the system.

Maj-Gen. Lahiri said that satellites were likely to be used more frequently for communication in the Army in the near future, but added that such communication had little security. For, it was easy to intercept messages transmitted through satellites and if the enemy could break the code, they would easily decipher the messages. Also, it was relatively easy to shoot down a satellite which might jeopardize the entire communication system during war. High frequency radio sets could perform functions similar to satellite communication and were more secure. The Corps of Signals had already established its own facilities for troposcatter communication.

War-time exercises of signal units were demonstrated to a group of reporters at Fort William during the day on the occasion of the 73rd anniversary of the Corps of Signals to be celebrated on Wednesday. The exercise, in which high frequency radio relay sets, medium frequency radio sets and equipment for line communication were displayed, highlighted the overwhelming dependence on electronics for communication in war at present.

It was pointed out that the days of bugles, trumpets, flag and smoke as means of signalling had become obsolete because in the era of mobile warfare one could not afford to have the communication system fail. No operation could hope to succeed without effective command and control.

Before World War I, the Sappers and Miners, under the Corps of Engineers, were charged with the responsibility of providing communication to the Army. The Signals assumed separate identity in 1911, but it was still under the administration of the Engineers. In 1920, the Royal Corps of Indian Signals was constituted as a separate arm, it was redesigned as Corps of Signals in 1950.

CSO: 5500/7108

## OFFICIAL TELLS IMPROVEMENTS IN TV COVERAGE, CONTENT

Madras THE HINDU SERVEY OF INDIAN INDUSTRY 1983 in English pp 193, 194, 199

[Article by H. K. L. Bhagat, union minister of state for information and broadcasting]

[Text]

INDIA is poised for a giant leap in the expansion of television. By the end of the Sixth Plan (March 1985), the percentage of population covered by television will increase more than four times to 70 per cent, from 15 per cent at the beginning.

The benefits of this powerful audio-visual medium would become available to people living even in remote areas. We have never viewed television as a mere pastime. From the beginning, we have realised its importance to a country like ours whose tradition-bound society has to be transformed into a scientific and technologically progressive one. The role of television has always been clearly perceived as that of education in the broadest sense of the term aimed at national development in all its aspects.

Thus, television is conceived as a vital input for social change and development with the ultimate object of bringing about a transformation in the quality of life of the people. This challenging task is sought to be accomplished by providing on TV information, education and entertainment.

Behind this quantum-jump in television coverage is a saga of massive and multi-pronged planning and implementation covering both the hardware and software. In respect of hardware alone, the task involves the setting up of 26 high power transmitters (HPTs) and 118 low power transmitters (LPTs) at a cost of Rs. 95 crores within a limited time frame. Several major constraints have had to be overcome in carrying out this crash programme such as ensuring the availability of indigenously manufac-

tured equipment within the limited time, obtaining clearance for interference-free VHF frequencies for the large number of transmitters; securing land at various sites; construction of transmitter buildings and erection of towers and installations and above all, finding the necessary trained manpower.

### Advantages of low power transmitters

No doubt, the optimum and cost-effective means of providing TV coverage, particularly, to large urban and rural areas and population, is by setting up 10 kW high power TV transmitters with 150 metre high towers. The manufacture and installation of these transmitters and towers, generally, takes 2-3 years. The low power transmitters, on the other hand, have a distinct advantage in that they can be installed quickly and provide a simple and ready answer for covering remote and isolated areas. Against the internationally accepted norm of 49 db (uV'M) for thinly populated areas, it is expected that a 40 db (uV'M) signal would provide satisfactory service in our rural areas, with lower ambient noise, as a first step.

The manufacture of transmitters and allied equipment has been entrusted to various public sector undertakings, such as Bharat Electronics, Gujarat Communications and Electronics Ltd., ECIL and Keltron and the work is progressing according to schedule. Action has been taken simultaneously to construct TV towers. Recruitment and training of staff is also well under way.

### Orders for local industry

The emphasis in implementation of the TV expansion plan was early

completion of the projects. Equipment was available in foreign markets with early dates of delivery and competitive prices. However, a policy decision was taken that the Indian electronic industry should not be deprived of this major opportunity for expansion. Orders for the entire equipment comprising HPTs, LPTs, satellite receive terminals and most of the test instruments were, therefore, placed on Indian firms. This gave an opportunity for the local industry to introduce new lines of production such as the LPTs which were not being manufactured in this country earlier. The total value of orders for electronic equipment alone exceeds Rs. 32 crores.

TV broadcasting provides a fillip to the electronics industry, particularly in the receiving sector where the investment will be several times more than in the transmission sector. If the annual offtake of TV receivers reaches a million which is not too optimistic, this would generate industrial production of the order of Rs. 200 crores a year. An attractive feature of the TV receiver industry is that it is non-polluting and spread out in smaller towns which helps backward areas. Besides, it provides jobs for a large army of educated self-employed in the field of receiver servicing.

The 26 high power transmitters will be located in Vijayawada and Visakhapatnam (Andhra Pradesh); Guwahati (Assam); Patna and Ranchi (Bihar); Ahmedabad, Dwarka and Rajkot (Gujarat); Kasauli (Himachal Pradesh); Jammu and Poonch (Jammu & Kashmir); Cochin and Trivandrum (Kerala); Bhopal and Indore (Madhya Pradesh); Cuttack (Orissa); Bhatinda (Punjab); Kodaikanal (Tamil Nadu); Allahabad, Agra, Varanasi and Gorakhpur (Uttar Pradesh); Agartala (Tripura); and Asansol, Kurseong and Murshidabad (West Bengal).

The low power transmitters will be located at 118 different centres in Assam (2), Andhra Pradesh (11), Bihar (8), Gujarat (6), Haryana (2), Karnataka (11), Kerala (3), Madhya Pradesh (10), Maharashtra (18), Manipur (1), Orissa (3), Rajasthan (11), Punjab (1), Tamil Nadu (6), Uttar Pradesh (15), West Bengal (5), Himachal Pradesh (1), Jammu & Kashmir (2), Meghalaya (1) and Pondicherry (1).

This expansion will bring television to towns with population of one lakh and above (and adjoining rural areas) and to selected border and strategic regions and important national project areas. With the implementation of these schemes, the

number of TV transmitters would increase to 180. This will be the highest among ABU countries, leaving out Japan.

#### Move for second channel

The coverage, at the end of the Sixth Plan, would extend to about 47.58 crore people (70 per cent) consisting of 13.67 crores of urban and 33.91 crores of rural population. The Fifth Plan allocation for expansion of television was Rs. 50 crores. As against this, the Sixth Plan proposals involve an outlay of Rs. 136 crores. In addition, an amount of Rs. 58 crores is being spent on expansion of television network from out of the revenues earned from commercials.

Steps are under way for increasing the commercial revenues by introduction of sponsored programmes and setting up of a second TV channel at major centres. Guidelines for sponsorship have been revised by the Government in July, 1983. These provide for three possibilities for sponsorship — (i) Programmes offered/produced by Doordarshan, (ii) programmes produced by the sponsors themselves, (iii) programmes imported by sponsors.

The rates for the various categories have been rationalised and a considerable degree of enthusiasm is now seen in regard to sponsored programmes. Some sponsored programmes have already been started and many others are in the pipeline.

It is proposed to plough back funds, thus generated, for improvement of programmes and modernisation of technical equipment and facilities.

#### Promise of INSAT

The advent of the satellite has given a powerful impetus to the expansion of television coverage. Following the Satellite Instructional Television Experiment (SITE) in 1975-76, which brought out clearly the enthusiastic acceptance of television by the rural community, we launched on the development of a multi-purpose Indian National Satellite (INSAT) of our own. Stressing the importance and significance of the satellite for national development, the Prime Minister, Mrs. Indira Gandhi, pointed out: "Besides its tremendous benefits in the field of education, the satellite will also greatly help in spreading the scientific temper. It will also greatly help the spread of the nationalist feeling and national integration. Thus, it is an important acquisition".

Undeterred by the limited success of INSAT 1A, India had gone ahead with the programme and IN-

SAT 1B has been successfully launched. This has opened up tremendous possibilities of rapid development in various spheres of communication besides other benefits. Satellite communication helps to carry telephone, television and other forms of communication services throughout the country without any discrimination of terrain, stage of development or distance. This was amply demonstrated for the first time when the Prime Minister's address to the nation from the ramparts of the Red Fort in Delhi on August 15, 1982 was telecast live over the entire Doordarshan network of 20 stations. Further, the extension of the Asian Games coverage not only to the State capitals but also to remote and border areas

**10 kW high power TV transmitter made by Bharat Electronics Ltd., Bangalore, which will also be supplying low power (100 W) transmitters for the Centre's crash television expansion programme.**

including the north-eastern region and Port Blair, well established the feasibility of utilising low power transmitters for rapid expansion of TV coverage. In this context, the crash expansion programme of Doordarshan assumes added significance.

The TV segment of INSAT utilisation envisages telecast of area specific and educational programmes directed to rural audiences in three districts each of six selected States of Andhra Pradesh, Orissa, Maharashtra, Gujarat, Bihar and Uttar Pradesh. The services in the first three States started with effect from August 15, 1982. Service in the remaining three States is expected to be commissioned during 1984. Two thousand direct reception sets and an equal number of VHF community viewing receivers are proposed to be deployed in the villages of these six States. Of these, 400 direct reception sets each in Andhra Pradesh and Orissa and 150 VHF receivers in Maharashtra have since been provided. The remaining sets are being procured.

A national TV service has been introduced with effect from August 15, 1982 which is telecast simultaneously, between 2100 — 2230 hours everyday, over the entire network. The 20 low power transmitters, spread all over the country, relay programmes from Doordarshan Kendra, Delhi, via INSAT 1B and 144 new transmitters, under implementation, will also relay programmes through this satellite.

The enormous demands that such a vastly expanded service would

make by way of software can well be imagined. Not only would the programmes have to have wider variety but they also would have to be socially relevant and have linguistic affinity in the different regions. At the same time, the national perspective cannot be lost sight of. This calls for careful but urgent planning. This task has been entrusted to a working group under the chairmanship of Dr. P. C. Joshi of the Institute of Economic Growth, Delhi. The terms of reference of the group are:

- (i) To prepare a detailed software plan for Doordarshan taking into consideration the main objectives of TV of assisting in the process of social and economic development in the country and to act as an effective medium for providing information, education and entertainment;
- (ii) To examine the need for starting a multichannel service considering the composition of urban and rural viewers and recommend a programme pattern for the same, taking into account the programme production facilities, both existing and planned.
- (iii) To assess the manpower requirement and training facilities and suggest measures for improvement from the point of view of software; and
- (iv) To evolve a system of evaluation of the programme and artist performance as well as a system for monitoring the programme.

Meanwhile, several steps have been taken to invest Doordarshan's news and other programmes with greater interest and appeal. There is now increased use of visuals in Doordarshan's news. Visuals are directly obtained from seven TV stations which are linked to Delhi Doordarshan by microwave. Other measures include equipping newsreel offices at eight other important towns with 16 mm cameras to get regular news-clippings, securing a daily feed of international news; and using INSAT 1B pictures and other visual aids for daily weather bulletins.

The quality and appeal of the other TV programmes are also proposed to be raised by a number of TV serials, 'shows' and other fixed slot items. With this object in view, a few committees have been set up to suggest ways and give necessary advice to augment the hardware and software aspects of development of the TV network.

A long serial comprising a number of episodes on the pattern of the Mexican Soap Opera is under production for promoting family planning. Doordarshan producers in metro

cities have been asked to spot successful stage plays for suitable adaptation to TV with the ultimate object of evolving a distinct TV theatre. Similarly, a total conceptual plan is being prepared to adapt traditional art for the TV medium. Arrangements are being worked out with a number of foreign missions for the exchange of high quality programmes. Similar attention is being paid to raise the standards of education and children's programmes. It is also proposed to associate independent producers with Doordarshan in a big way.

The thrust during the Seventh Plan will be on the development of studio facilities for production of TV programmes in local languages and provision of links which carry these programmes to the respective transmitters. This would involve expansion of TV centres already commissioned, construction of new studio centres and electronic field production bases, replacement of black and white equipment wherever it has served its useful life with new colour equipment and provision of equipment for field-based coverages. Simultaneously, the transmission network has to be expanded to bring at least 90 per cent of the population under TV coverage.

Laying the foundation stone of the TV transmitter at Allahabad Doordarshan on August 1, 1983, the Prime Minister said: "I hope this station will give the people in and around Allahabad entertainment, education and more information about what our ancient world was like, what India is today, what the modern world is like and what the future will be. I hope it will promote feelings of unity and love for the country so that we can raise this country to greater heights."

Doordarshan's expansion of TV coverage is aimed at achieving this objective not only in regard to people in and around Allahabad but to people in all regions of the country.

CSO: 5500/7113

## BRIEFS

LOW-POWER TRANSMITTER DEVELOPED--Bangalore--The first low power transmitter developed by the Bharat Electronics Limited (BEL) has been evaluated and despatched to Doordarshan. This is one of the 69 such transmitters BEL will be supplying to Doordarshan for its crash programme to extend TV coverage to 70 per cent of India's population by the end of 1984. BEL is also supplying the technology for the exciters for low power transmitters to the manufacturers of the remaining LPTs required for the plan. The Electronics Corporation and Keltron will supply the sub-systems to BEL to meet the requirements. BEL will also be supplying 19 high power transmitters during the year. It has already delivered nine high power transmitters and one medium power transmitter during the current Plan period. Doordarshan's plan for extension of TV programme is based on use of INSAT-1B for networking. The programmes will be relayed by the satellite and received by TV Receive Only (TVRO) terminals. BEL will be supplying 89 of these TVROs. It has supplied 32 such terminals earlier. [Text] [Madras THE HINDU in English 26 Feb 84 p 6]

NEW TELEPHONE EXCHANGE--Madras, Feb. 25--The capacity of Madras Telephones crossed the one lakh lines mark today with the commissioning of the 5000-line Mambalam-II Exchange this afternoon. Installed in the newly-constructed first floor of the Mambalam-I Exchange (India's first crossbar exchange) in Nandanam on Anna Salai, the new exchange is of the crossbar type. It will have a six-digit numbering scheme starting with "45". Besides providing 1200 new connections, the exchange will give relief to the Mambalam-I and Mylapore exchanges by taking over 3,100 lines. Inaugurating the exchange, Mr. C. P. Vasudevan, Member, Committee of Telecommunications and former Telecom Adviser, World Bank, said that despite good human resources and technology, telephone services had not improved much mainly because of under-investment. If the department was serious about maintaining the demand and supply balance, it should go in for large-sized capacity exchanges of the latest type. In his presidential address, Mr. T. S. Subramanian, Member (Telecom Development) P&T Board, said the department laid equal emphasis on expansion and efficiency. Because of financial, equipment and other constraints, there was the problem of reconciling rural services development with urban expansion to wipe out the long waiting-list. Recently, rules had been liberalised permitting subscribers to purchase attachments and additional equipment in the private sector while the main instrument was provided by the department. Welcoming the

gathering, Mr. K. C. Ramadoss, General Manager, Madras Telephones, said the Mambalam-II exchange equipment had been imported from Japan at a cost of Rs. 2.59 crores. The call setting up in less than 10 seconds was one of the special features of the exchange. Mr. D. P. S. Pai, Area Manager (South) and Mr. C. V. Rajan, Deputy General Manager (Internal Planning), said the new exchange was the third to be commissioned in the Madras Telephone System since the beginning of this year. [Text] [Madras THE HINDU in English 26 Feb 84 p 13]

TELEPHONE EXCHANGE INAUGURATED--A new 10,000-line electronic telephone exchange inaugurated in Tis Hazari area on Saturday will ensure 2,000 fresh connections. Numbers starting with '22' will be changed to '251' and '252'. [Text] [New Delhi PATRIOT in English 26 Feb 84 p 3]

CALCUTTA-HOWRAH MICROWAVE LINK--The Calcutta Telephone authorities will set up in March a microwave radio link between "67" exchange in Howrah and the central switching point at Tieretta Bazar to remove the present difficulties of subscribers of the Howrah exchange to have telephone connexions with subscribers on the Calcutta side of the Hooghly. It is learnt that frequent faults in the junction box near Howrah Bridge and falling efficiency of the cables following repeated repairs are said to be the two primary reasons for the present erratic telephone link between Howrah and Calcutta. The microwave link will ensure tele-connexion between the two cities. Similar microwave links will be set up from Chinsurah and Kalighat (47 exchange) to the central switching point in Calcutta. Such a microwave connexion had already been established between Serampore and Calcutta as a result of which tele-link between the two places has improved significantly, it is stated. [Text] [Calcutta THE STATESMAN in English 29 Feb 84 p 4]

CSO: 5500/7109

NEW ANTENNA TO RECEIVE SATELLITE PROGRAMS

Jerusalem THE JERUSALEM POST in English 21 Feb 84 p 6

[Article by Yitzhak Oked]

[Text]

TEL AVIV. — Television viewers will soon be able to see two more channels — programmes of the Saudi Arabian television service.

In May the French will launch for the Saudis a communication satellite called Arab-Sat, which will beam TV shows on two channels.

Television engineer Morris Ben-David, who owns the Anteco company which builds and installs TV antennas told *The Jerusalem Post* that Israelis will be able to see these programmes if they have a suitable antenna. He said that according to his information these two channels will be similar to the Jordanian foreign channel, which carries mainly imported programmes.

Ben-David is also a consultant of MET — Middle East Television — operated by Americans in Southern Lebanon near the Good Fence.

He told *The Jerusalem Post* that he has developed a new antenna for the reception of programmes from Arab-Sat. It will be cheaper and much smaller than the existing dish antennas which can receive programmes from satellites, he said. The new antenna is a microstrip antenna, which includes a printed circuit imbedded in the antenna. It needs a down-converter, so that transmissions from the satellite can be received by ordinary colour TV sets. The antenna will cost \$150 to \$200 (without installation). The starting price of dish antennas is about \$1,000.

Ben-David described rumours that the MET station was about to close as baseless, and said that the opposite was true that MET had recently invested money to improve its coverage.

CSO: 5500/4508

INTER-AFRICAN AFFAIRS

HEAVY AID TO WEST AFRICAN TELECOMMUNICATIONS REPORTED

Frankfurt/Main FRANKFURTER ZEITUNG/BLICK DURCH DIE WIRTSCHAFT in German  
13 Feb 84 p 2

[Article: "Telecommunications Projects in West African Countries. Industrial Nations and International Organizations Grant Financial and Technical Aid"]

[Text] W. An. FRANKFURT, 12 Feb. New projects in the field of telecommunications have recently been planned, begun or already completed in several West African countries. Investments of regional significance have also been made within the scope of the Economic Community of West African States (Ecowas). International organizations such as the World Bank, the European Investment Bank or the African Development Bank, rich Arab oil-producing countries and individual industrial nations are involved in the financing of many of these projects.

Ecowas recently made an international call for bids (only for companies within the European Communities) for the second phase of the Intelcom 1 project. The project includes delivery, installation and commissioning of two radio links, Kaolack (Senegal)--Banjul (The Gambia)--Cacheu (Guinea-Bissau) and Tambacounda (Senegal)--Mali (Guinea). This project is being financed by the European Investment Bank (EIB), Luxembourg, which granted Ecowas a loan of 10 million accounting units (1 accounting unit = approx. DM 2.28) at the end of 1983.

The Arab Fund for Economic and Social Development (AFESD), located in Kuwait, granted Mauritania a loan of 1.2 million Kuwait dinars (1 Kuwait dinar = about DM 9.31) in the spring of 1983 to be used within the framework of the fifth Pan-Arab Telecommunications Project for erecting and equipping a satellite ground station.

In the fall of 1983, a long-term development plan for telecommunications, to cover a period of 15 years, was approved by the government of Senegal. The first phase of the plan is a priority schedule in which an investment of 11 billion francs CFA (100 francs CFA = about DM 0.67) is planned for the first three years (1983/84 to 1985/86) and includes 60 percent foreign financing. First, the lack of telephone connections in the Cap Vert region,

which includes the capital city of Dakar, will be remedied by installing approximately 6000 units. About 3000 units will also be installed primarily in Thies and Kaolack. Telephone communications between the regional centers will be upgraded, and the central telex station in Dakar will be modernized. The Post and Telecommunications Office of Senegal (OPT) in Dakar is responsible for telecommunications in Senegal.

In May the telecommunications system was expanded in Mali with the aid of a loan from the International Development Association (IDA) of the World Bank in the amount of \$13.5 million which had been granted in the spring of 1982. The individual projects include the establishment of a radio link between Koutiala and Sikasso and a central telex station (500 connections) in the capital city of Bamako. In addition, the telephone connections in Bamako and a number of provincial cities are to be expanded, and 9200 telephones and 100 telex machines are to be purchased.

In September 1982, the FRG granted Guinea a capital aid loan of DM 1.5 million for the purchase of 25 telex machines, measuring instruments for the central telex station, cable networks and replacement parts.

In the summer of 1982, the EIB granted the Ivory Coast a loan of about 10 million accounting units to be used by the International Telecommunications Company of the Ivory Coast (Intelci) for expansion of the existing installation for international telephone traffic. In particular, the construction of a new completely electronic exchange for international telephone traffic (2000 connections in Abidjan) is planned with its commissioning set for 1984. The total cost for the expansion program is estimated at 40 million accounting units. The French company, France-Cables et Radio, of Paris received the contract for consulting.

The Post and Telecommunications of Benin, of Cotonou in the People's Republic of Benin in mid-1983 contracted with the French firm Telecommunications Radioelectriques et Telephoniques (TRT) for the renewal of several radio links, including among others the Cotonou--Lakona--Bohicon and Lagos (Nigeria)--Cotonou--Lome (Togo) links. A new radio link will connect Natitingou to Porga in neighboring Upper Volta. The French national Central Fund for Economic Cooperation (CCCE) is financing this project.

In the summer of 1983, the British firm, Pye Telecommunications, Ltd., obtained a contract in Ghana from the Ghana Cocoa Marketing Board (GCMB) for the construction of a telecommunications network to connect the head administrative offices in Accra with the large cacao cultivating areas of the nation's interior. The government of Ghana had previously received a loan of \$26 million from Japan in the spring of 1983 for the expansion and modernization of the telecommunications network and the radio and television systems.

In Nigeria in the fall of 1982, Siemens AG of Munich/Berlin connected the new capital city of Abuja to the country's communications network with two new radio links. The DM 52 million contract included all communications links (telephone, telex and data transmission), radio and TV broadcasting, equipment for the infrastructure and project management.

The British firm GEC Telecommunications in the fall of 1983 won a contract in Nigeria valued at 13.5 million pounds sterling for the modernization of the radio systems which GEC had installed in 1970. The necessary equipment will be manufactured in its British plants in Coventry and Tre-forest and will be delivered in 1984. The Italian firm Teletta, a member of the Fiat group was awarded a contract valued at 50 billion lire in the fall of 1983 by the state-owned National Nigerian Oil Corporation (NNPC) for the modernization of its own telecommunications network. The necessary cables are to be supplied by the Italian company Pirelli and Ceat. The Nigerian government is planning to use telecommunications satellites in connection with the installation of ground stations. This project would require an investment of about \$300 million.

In Upper Volta, the Post and Telecommunications Office of Ouagadougou is expanding the telephone systems in the capital city of Ouagadougou and the regional center of Bobo Dioulasso, as well as installing the two radio links, Dedougou--Bobo Dioulasso and Bobo Dioulasso-Gaoua, with a combined length of 380 km. The consulting work for this project, which is being financed by the World Bank, has been awarded to the Swiss firm Elektrowatt Ingenieurunternehmung AG of Zurich.

In the Central African Republic, the African Development Bank of Abidjan (Ivory Coast) is financing the modernization and expansion of the telephone system in the capital city of Bangui. An international call for bids for this project was recently made by the Central African Post and Telecommunications Office of Bangui.

In Cameroon, investments of about 71 billion francs CFA are planned within the scope of the current five-year plan (1981/82 to 1985/86) for telecommunications. The post office department is responsible for domestic telephone and telex traffic while the Telecommunications Company of Cameroon (Intelcam) of Jaunde handles international traffic. Intelcam was completely nationalized in 1982. The prior shareholders, France-Cables et Radio (30 percent) and Britain's Cable and Wireless PLC of London (10 percent), were compensated with 1.35 billion francs CFA.

The French Commercial Credit in the summer of 1983 granted a loan of 6.2 billion francs CFA to finance a project involving the construction of radio links in Cameroon. The contract for this project was awarded to TRT, already mentioned above. In the spring of 1983 an additional contract went to a subsidiary of the French company Thomson-CSF. The contract with a value of 80 million French francs, was for the expansion of the telephone systems in Douala and in the capital, Jaunde, by a total of 12,000 connections. Shortly before this, Thomson CSF had already been contracted with to build the telephone exchanges in Bamenda and Manfe.

In the People's Republic of the Congo, the official opening of the radio link between the capital of Brazzaville and the harbor city of Pointe Noire took place at the end of December 1982. It was constructed by the

French company TRT, which had received a contract valued at more than 120 million French francs from the Congolese government for turnkey expansion of the telecommunications system in the southeastern part of the country.

In the spring of 1983, the satellite ground station in Praia on the islands of Cape Verde was officially opened, establishing a direct connection between this island nation and Portugal, Senegal, Angola, the U.S. and France. At the end of 1982 the Portuguese subsidiary of Siemens AG, as general contractor in Cape Verde, received a \$12 million contract for the construction of a telephone and telex system. Deliveries from Siemens plants in the FRG and Brazil were also planned. The contract concerned mainly the construction of telephone exchange in Praia and Mindelo and a central telex station in Praia.

12552  
CSO: 5500/51

FUNEN TELEPHONE COMPANY EXPANDING CAPACITY

Copenhagen BERLINGSKE TIDENDE in Danish 23 Feb 84 p 11

[Article by Michael Rastrup Smith]

[Text] The Funen Municipal Telephone Company will lay modern optical fiber cables costing 160 million kroner over the next 5 years. The cables will be laid whether or not the hybrid network becomes a reality.

"Our network has become so full that we will have to install optical fiber cables on all the main routes in the next 5 years.

"These cables will be laid whether or not the hybrid network comes about and the reserve capacity in the cables will be adequate for transmitting TV signals as well as regular telephone calls," said P. Toftdahl, director of Funen Municipal Telephone Company, who maintained that there will be a market for optical fiber cables in this country whether or not the politicians decide on a hybrid network.

In connection with the debate on the hybrid network, director Toftdahl said it has been conducted on the basis of the wrong assumptions.

"As far as I can see, it is no problem that private antenna societies are allowed to receive signals from orbiting communications satellites on their own parabolic antennas. If an antenna society feels this is the most economical way, then of course it should be allowed to receive the signals on its own.

"The real problem is that we do not have any coordination of cable installation today. Telephone companies and private antenna societies can bury cables in the same area independently of each other.

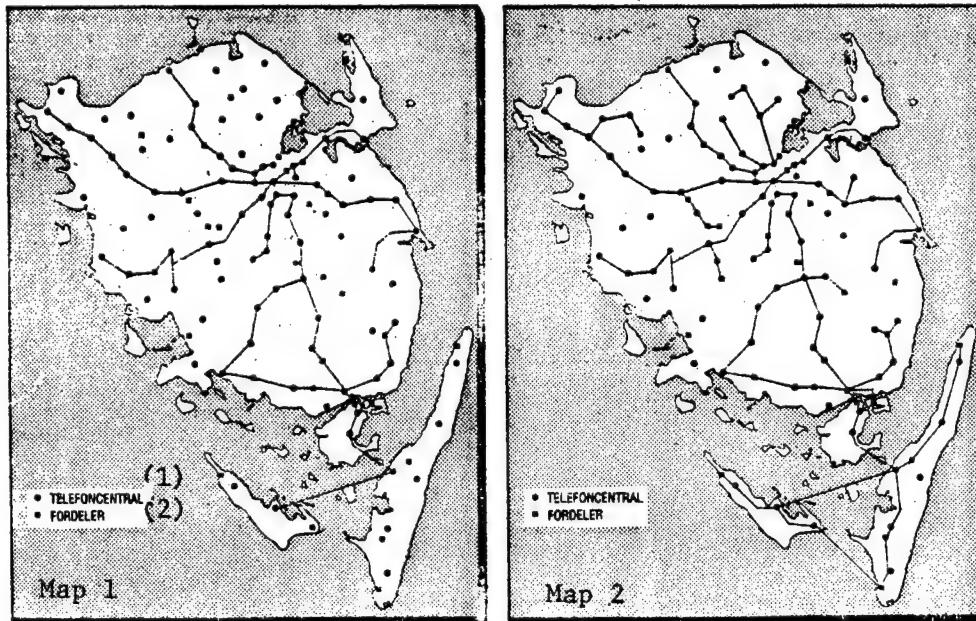
"This is impractical and here we need some overall coordination. I hope the legislators will be aware that this is where the problem lies."

Director Toftdahl said that the expansion plan for the hybrid network the Teleadministration is preparing for is an expression of the maximum amount

possible and that the rate of expansion could probably be slowed down somewhat.

"I would still regard coordination of the hybrid network expansion as being more important than the rate itself," he said.

"Incidentally, one should not regard the hybrid network as an either/or question. It is more a question of both, since in some outlying areas it may be practical to set up antenna solutions temporarily which in principle can be done by both private antenna societies and telephone companies."



Map 1 shows the areas where Funen Municipal Telephone Company is laying optical fiber cables, whether or not the hybrid network becomes a reality. Map 2 shows the areas that will have these cables if the hybrid network is approved.

Key:

1. Telephone exchange
2. Distribution link

6578

CSO: 5500/2611-A

DENMARK

POSTAL SYSTEM, TELEPHONE COMPANIES COMPETE OVER CABLE INSTALLATION

Copenhagen BERLINGSKE AFTEN in Danish 24 Feb-1 Mar 84 p 7

[Article by Villy Vestergaard and Axel Pihl-Andersen]

[Excerpts] Communications Minister Arne Melchior has just called P&T [Postal and Telegraphic System] and Jutland Telephone "to order" after the two public companies competed for and openly squabbled over the optical fiber cables between Kolding and Arhus. Rivalry between the telephone companies and P&T is nothing new, but it has been given new life as a result of the information society that is beckoning in the future--and both prestige and money are involved.

Like a pair of naughty children, Jutland Telephone and P&T were called "to order" by their father, Communications Minister Arne Melchior (Center-Democrat). For some time now they have been teasing and jostling each other about the cables.

The current conflict between the two companies concerns optical fiber cables on the stretch between Kolding and Arhus and the conflict has led Melchior to lose patience and demand an explanation from the combatants. As reported previously in the weekend edition of BERLINGSKE AFTEN, P&T has plans to lay optical fiber cables practically on top of those Jutland Telephone has already installed between Kolding and Arhus.

"I cannot accept a waste of resources and I must have an explanation," said Arne Melchior.

The matter is the latest and perhaps most grotesque outbreak in years of rivalry between the telephone companies and P&T who interpret an old agreement from 1950 on their respective tasks in very different ways.

The cable war has also been taken up by the State Telecommunications Council, which has the job of coordinating work performed by various telecommunications companies, which is easier said than done. And even if a solution

can be found here to the cable problem, the general issue of the division of tasks between the telephone companies and P&T will remain unresolved.

This is a power struggle over both prestige and finances, in which the telephone companies on the one hand would like P&T out of their concession areas, while P&T on the other hand is fighting to preserve its positions on the telecommunications side, the only profitable area for the gigantic state agency. No fewer than ten working groups with representatives from all the telephone companies have been working since 1 October on a new "framework agreement" among the parties, but very few people--including those who work for the companies themselves--believe that the telephone companies and P&T can reach agreement on anything very permanent.

Whispers have been heard around about the old proposal for a unified telecommunications agency. The idea of one and only one state telecommunications company has been discussed at regular intervals for the last 50 years but Denmark and Finland are still the only European countries where various telephone companies and the Postal and Telegraphic System handle communications jointly.

#### P&T's Monopoly

Director Kurt Vestergaard of Jutland Telephone says the telephone companies and P&T can interpret the "concordance" of 1950 in different ways, but in practice, P&T has had a monopoly on data traffic by cable and over the air waves via radio hookups. And in addition to P&T's own area on Mon and in southern Jutland, P&T has also handled telephone connections between the different regions and those going outside the country.

But technological developments have made this division of tasks less and less appropriate. With the transition from analog to digital transmission the telephone companies will start combining telephone activities, data transmission and other forms of communication in the same network within a few years, which in practice will make it extremely difficult to distinguish between the various services--and to unravel the threads!--between P&T and the telephone companies.

The present arrangement already leads to a good deal of dual administration and big banks have actually hired extra people to handle the bureaucracy that arises when P&T and the telephone companies lease each other's cables and pay fees to each other.

"The organization is completely idiotic and so outdated. A complete waste of administrative effort," said KTAS [Copenhagen Telephone Company] chairman Mogens Camre (Social Democrat).

#### Profit on Telecommunications

Last year P&T had a total deficit of 373 million kroner--but a surplus of 385 million kroner on the telecommunications side and against that background

the company has no interest in giving up part of its best business to the telephone companies. P&T also wants to keep its monopoly on radio transmissions and the telephone companies have a hard time seeing any justification for that.

"There is nothing in the 1950 agreement about radio hookups, as far as I can see, and we want permission to set up radio links to the extent we find necessary," said Kurt Vestergaard of Jutland Telephone. "And without having to get a temporary permit from P&T."

For example, Jutland Telephone has already established radio links on the stretch between Juelsminde and Horsens. According to Jutland Telephone this is a safeguard for Juelsminde subscribers, who sometimes have trouble getting in touch with the outside world due to massive excavation work in the area, while other people regard this as a base provocation and an attempt to break P&T's air supremacy. P&T granted a temporary permit for the radio hookup, although "they made a terrific fuss about it," as Kurt Vestergaard put it.

The Jutland company also seems to be toying with the idea of receiving TV signals from the air waves. A parabolic antenna on the roof of Jutland Telephone's enormous headquarters in Slet, near Arhus, receives signals from the joint European Communications Satellite, ECS-1, and according to reports, permission was not sought from P&T, which also has a monopoly on that kind of thing. It is true that the TV signals are just for internal use--but it is an open secret that this is also a way to annoy P&T.

And it is not just the people from Jutland who are being a nuisance. KTAS--the Copenhagen Telephone Company--has also established a data transmission line from the Danish Technical College to Copenhagen University. Also without asking for permission.

Slowly but surely the telephone companies are chipping away at P&T's monopolies and time-honored rights and that is also what happened in 1979 when Jutland Telephone laid the advanced and much-discussed optical fiber cables between Kolding and Arhus. P&T had always regarded this stretch as its own, but at that time it was weakened by the postal scandal, which is partly why it waited until now to present concrete plans to lay another optical fiber cable along the same route. Although it is unlikely the plans will be carried out after Arne Melchior's intervention.

#### Stock Company Model

Back in 1978-79, the so-called "steering group" that was supposed to give an indication of future telecommunications activity said that the best solution would be a model with state stock companies.

The group, which included the heads of the telephone companies, suggested that P&T's telecommunications section be separated from the postal system and turned into a state stock company and that the FKT--Funen Municipal

Telephone Company--cooperative also be given stock company status. There would then be four telecommunications companies on an equal basis and their activities could be run by a parent company--also with the status of a state stock company.

But the steering group was not as enthusiastic about the idea of a unified telecommunications company coming directly under the state in the same way as P&T. The experiences from there were alarming and only a stock company model could guarantee what the group felt was the most important thing: giving the companies the power to act and the ability to retain any profits and use them as the companies saw fit.

But the politicians did not follow the major recommendations of the report and chose the easiest--and some say the weakest--solution, in which neither P&T nor the telephone companies were touched, but the Telecommunications Inspectorate was simply replaced with a new coordinating body: the State Telecommunications Council which serves as an umbrella over all the telecommunications companies.

Communications Minister Arne Melchior and the government have no plans today for a unified telecommunications agency in any form.

"I believe in our current structure which has given quite good results in the way of quality, service and prices," the communications minister said.

"Of course we must have clear lines of direction between the telephone companies and P&T and if they cannot straighten things out through negotiations, someone will have to straighten them out. Or, in other words, if medicine doesn't work, we will have to use surgery," said Melchior with one of his vivid turns of speech.

But we do not expect drastic surgery by the communications minister. So far the politicians have shied away from major organizational changes in both P&T and the telephone companies, because they are too much trouble.

The State Telecommunications Council's attempt to arrive at a new framework agreement before the likely investment of billions in a hybrid network may prevent further clashes and the wasting of financial resources on the part of P&T and the telephone companies, but it is unlikely to produce the clarification that is needed. Or, as director Kurt Vestergaard of Jutland Telephone said:

"There will be a new compromise, but developments are on our side."

6578  
CSO: 5500/2611-A

DENMARK

MANY FOREIGN TV CHANNELS TO BECOME AVAILABLE

Copenhagen BERLINGSKE TIDENDE in Danish 26 Feb 84 p 8

[Article by Steffen Jensen]

[Text] After the German Social Democrats changed their position on private and commercial radio and TV stations, it will soon be possible to get 14 to 16 programs in Denmark. This will require a change in the law, but the government parties have already reacted positively to the idea.

Within a few years, Danish viewers will be able to receive 14 German TV programs, but it will be possible to get the first two programs in Denmark as early as this spring. However a change in the broadcasting law will be needed.

Now that the German Social Democratic Party, SPD, has changed its position on private and commercial radio and TV stations, it is very likely that Denmark will be able to receive two new German TV programs sometime this spring.

There will be even more within just a few years. It will soon be possible to get all 14 German TV programs off the satellite over much of Europe and there will be many more later.

Probably as early as April or May, the European Communications Satellite, ECS, will transmit two German programs. One of them will be West Germany's first commercial TV program--2. Deutsches Fernsehn--which has just started up in Ludwigshafen as cable TV.

These two German TV programs plus the British "Sky-TV" and a French cultural program will then be beamed down from space--to Denmark as well as other countries. Of course only antenna societies with a 3-meter parabolic antenna will be able to receive these first satellite programs.

This would require a change in the Danish broadcasting law. A clear majority was demonstrated in Folketing recently in favor of breaking the Danish Radio monopoly.

When asked if an amendment to the law will be enacted, Communications Minister Arne Melchior replied:

"The cultural affairs minister has already presented a bill to break the monopoly of Danish Radio and it contains provisions that would make the re-laying of these signals from abroad possible. There is no doubt that this is what the government wants in this area."

But the communications minister doubted that things would move so quickly. First the antenna network will be expanded, so central and northern Jutland can receive two Swedish and two West German TV programs--as the rest of the country can already.

In the years ahead, another 14 German TV programs will be available on various satellites. From the beginning of 1985, there will be six more channels available on the Intensat satellite. During the summer of 1985 there will be yet another West German TV satellite with a large capacity. It will transmit another two TV programs plus 16 radio programs in hi-fi stereo quality and supposedly all this can be received directly using a small and fairly cheap antenna.

In 1987 we will have the German Kopernikus satellite with even more channels, all of which will probably be commercial channels.

6578  
CSO: 5500/2611-A

DENMARK

BRIEFS

TELE-TRANSMITTED MAIL POPULAR--The postal facsimile service has been a great success--on 15 March western Europe will be added. One of the biggest successes for the postal system in 1984 is the postal facsimile service in which one can send a letter from one end of the country to the other in a few minutes via the telephone network. This mail service is being doubled now, so that facsimile equipment will be installed in 88 post offices. Here one delivers a message which is then transmitted to the post office that is closest to the recipient and the message is then delivered with the regular mail or goes out as a special delivery. Messages can also be transmitted directly to the recipient's private equipment. A large number of Danish firms have facsimile equipment today. In Denmark a postal transmission costs 29 kroner for the first page and 18 kroner for subsequent pages. If the sender uses his own facsimile equipment, the price is only 7 kroner a page. On 15 March an arrangement between Denmark and West European countries will be introduced. [Text] [Copenhagen BERLINGSKE TIDENDE in Danish  
16 Feb 84 p 13] 6578

CSO: 5500/2611-A

FEDERAL REPUBLIC OF GERMANY

SIEMENS TRANSMITS 6 GIGABITS OF DATA/SECOND WITH NEW PROCESS

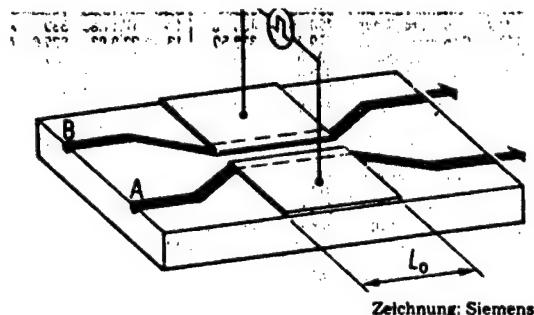
Frankfurt/Main FRANKFURTER ZEITUNG/BLICK DURCH DIE WIRTSCHAFT in German 27 Jan 84 p 7

[Article: "Laser Transmitter Modulates 6 Gigabits per Second"]

[Text] Siemens AG, Munich/Berlin. Optical telecommunications transmission at data rates above 500 Megabits per second can presently be accomplished with light conductors and laser diodes, according to Siemens. With this technology, numerous broad-band services can already be realized. However, in the future even higher data rates will be required for videophone hook-ups, for example. On the way to such communications possibilities, Siemens' research laboratories are working on data rates far into the Gigabit range: A new method with separate generation and modulation of the laser light makes possible with simple equipment low-loss (2dB) transmission at rates up to 6,000 Megabits (6 Gigabits) per second, thus a whole order of magnitude greater than before.

The firm goes on to report that the laser diodes presently serve as input light sources for optical circuits and as converters of electrical signals into optical signals. The optical power is encoded in the bit sequence, incoming electrical bits illuminate the laser diode. A critical limit is reached above 500 Megabits per second where the laser diodes can no longer respond fast enough to follow the electrical signals, and precise coupling of the electrical and optical signals becomes blurred; however, monomode optical conductors and wave lengths around 1.3 micrometers would permit much higher data rates.

Of aid here would be a process in which the laser diode emits continuous uniform light with modulation being accomplished in an attached crystal which is suited to handling very high data rates. Such "light switches" have been made in the Siemens research laboratories from lithium niobate. The electro-optical crystal has 2 5-micrometer-wide light paths spaced 5 micrometers apart running parallel for a distance of 10 millimeters (see sketch).



The light paths are formed by two thin titanium strips generated by diffusing the metal into the lithium niobate crystal. The model for this process is planar semiconductor technology. In the neighborhood of the titanium strips, the crystal's index of refraction is locally increased, thus defining the light paths. In a further planar process, control electrodes are attached on the light paths. An optical fiber and a laser diode connect the two light paths, but the main paths through the crystal remain open ended. When there is no voltage on the electrodes, light can cross the parallel path region and exit the crystal along the main paths while the shunt path remains dark. On the other hand, a voltage across the electrodes causes the light to flow into the shunt path, and no light is emitted outside of the crystal along the main paths. Since the control voltage is generated by the electrical intelligence signals, the optical bit sequence corresponds exactly to the message to be transmitted, reports Siemens.

Data rate, control voltage and optical insertion loss are however closely connected with the geometrical dimensions of the light paths and the electrodes. Siemens has succeeded in finding an improved electrode structure. The electrodes are divided into several segments in the longitudinal direction and different polarities are impressed across the individual segments ("Delta-Beta Reversing Structure").

9160  
CSO: 5500/2601

FEDERAL REPUBLIC OF GERMANY

BRIEFS

SOLAR PANEL FOR L-SAT--Recently manufactured in AEG-Telefunken's New Technologies/Space Division in Wedel near Hamburg, was the first of two solar generator panels for the to date most powerful telecommunications satellite in the world. On the gossamer-thin foils of the two foldable panels, each with a span of 10-m, a total of 43,000 solar cells are linked together. The solar cells themselves are only 0.18-mm thick so that a complete 26-kg panel folded for launching produces a package of only 2.90-m length, 30-cm width and 3.5-cm height. The solar-generator panels for the L-Sat (Large Satellite) will start producing electricity after 1986--at mission start, 5 kW; after 10 years in space, 3 kW.  
[Text] [Stuttgart BILD DER WISSENHSCHAFT in German Jan 84 p 31] 9160

CSO: 5500/2601

FINLAND

PAPER SUPPORTS PRIVATE FIRMS IN DRIVE TO END STATE MONOPOLY

Helsinki UUSI SUOMI in Finnish 20 Feb 84 p 2

[Editorial: "No State Monopoly in Communications Industry"]

[Text] The communications field over the last few years has produced an impression of being uncommonly controversial, although outsiders have obvious difficulty in seeing what all this free-wheeling combat is about. The recent report of the communications committee headed by Minister Esko Rekola clarifies the subject to a certain degree. However, difference in many of the central questions remain unanswered.

The problems in part are rooted in history. The telegraph service during the period of autonomy was administered by the Russian state, in part a military system. On the other hand the telephone came to Finland amazingly fast and its use was spread wide by private telephone companies. Until the 1930's even the long-distance telephone lines were in part privately operated. The privately owned telephone system is uncommon in Europe. It has meant a rapid development for us however and a more flexible service than in most other countries. At any rate there is no reason to reduce this effectiveness.

The legislation based on the czarist manifesto of 1886 and the law of 1919 has given rise to problems. It was easy to make a difference between the telephone and telegraph at that time. Now totally dissimilar electronic signals travel along the same lines which are difficult to separate juridically into two categories--telegraph and telephone.

The commission is to be congratulated at the very least on its formulation of basic principles. The report affirms in conformity with the demands of the new communications technology that the transmission lines cannot be classified on the basis of the type of messages sent.

Instead, it is proposed that differentiation be determined on whether anyone can join the network (public communications company) or whether there are restrictions to membership (private communications company). The preceding requires a license simply not taking into account giant antennas for transmitting programs. The law does not touch at all on message systems of little significance, such as the internal communications of businesses.

The proposal that anyone would be able to connect a terminal of approved type, or even a telephone instrument, to the net is of benefit to the client. Until now the telephone company had the exclusive right of leasing the apparatus.

Differences of opinion, instead, have arisen between the postal and telecommunications service and private telephone companies on the matter of basic franchises. If the postal and telecommunications service can continually increase its activities in areas of operation of the telephone companies while the development of the private companies is restricted, then the presently profitable and effective establishments finally will have to throw up their hands in surrender to the state.

The postal service is seeking, for example, to offer its major clients direct links to its long-distance lines through the local telephone companies. Here it is a question of the well-known 'pull-out-the-plums-from-the-pudding' procedure. The telephone companies on the other hand are not permitted to set up direct central connections, even though this could lead to a reduction in telephone charges.

The postal service pricing policy is in the background along with its jurisdiction. The more extensive its field of operations is, the more freely the postal service can set up its pricing structure so that in a competitive situation it can offer special deals by making good their costs by prices of the already-monopolized long-distance traffic.

The report offers an excellent point of departure for further deliberation. In particular when drawing the line between free enterprise and monopoly one must however be strict and must examine certain loopholes through which the state monopoly can slip in. This would not be in anyone's real interest.

9655  
CSO: 5500/2608

FRANCE

ALCATEL-THOMSON SEEKS WAYS TO EXPORT MORE IN EUROPE, CHINA

Paris ELECTRONIQUE ACTUALITES in French 24 Feb 84 p 11

/Article by D. Levy/

/Excerpt/ The minister of post and telecommunications, senior officials of the DGT /General Directorate for Telecommunications/, industrialists, and more especially the combined teams of CIT-ALCATEL /Industrial Telecommunications Company-Alsatian Atomic, Telecommunications, and Electronic Construction Co/ and Thomson have taken measures of major scope to increase French equipment and telecommunications exports. Their favorite targets are the European and Chinese markets while the United States has been more than ever present in their concerns.

In Europe a certain trend toward deregulation could be favorable to the French whose arguments are not negligible: Equipment with very high technology and the lowest prices in Europe (to the great prejudice of our manufacturers!).

In China it is technology transfer that is being promoted. Finally, in the United States, ALCATEL-Thompson is striving to realize within 5 years sales in the order of what it now enjoys in France.

From Portugal to Italy

Without for all that neglecting traditional markets--even though the financial difficulties of the Third World countries have reduced their demand level--the Ministry of Post and Telecommunications /PTT/ and the industrialists are now courting a new custom: that of the industrialized countries. In 1982 French exports of telephone equipment to the countries of the European Economic Community reached only 500 million francs (out of total of 2,779 million francs) of which only 3 percent was shipped to the Federal Republic of Germany and 2 percent to Britain. Too, the share of public utility products was not large in this turnover.

Hence the desire to broaden France's markets in Europe. But this goal calls for a new approach for French exports involving industrial offsets, local investments, or, depending on the case, agreements among manufacturers.

From the viewpoint of the Ministry of Post and Telecommunications, there is a readiness to envision every scenario to convince our European partners to establish the bases of European cooperation. This is the purpose of the present discussions:

1. Addressing the countries of the Iberian Peninsula, Louis Mexandeu uses the rhetoric of high politics: "You are seeking entry into the European Economic Community, but are you showing a European resolve? No way! Accordingly, it is necessary that you do business with European enterprises so that you may evolve from electromechanical switches to electronic switches (it being understood that the E-10 and the MT-25 will relieve you of the need for compatibility with system 14 of ITT." Do you have an employment problem? We are ready to study it together.
2. Addressing the United Kingdom, the DGT argues the advantages of interchangeable telephone exchanges representing a significant share of the domestic market (about 10 percent), thus obviating for the operator an unpleasant business relationship with a single supplier: In short, orders for the E-10 (or MT-25) as against system X. This is an approach that the British understand very well. But they still have to resist the appeals of sirens in remote places (notably, Northern Telecom and ATT-Philips /American Telephone and Telegraph-Philips/).
3. Addressing Italy, the DGT proposes a joint development agreement for switching exchanges (for relays and users) adapted to the public network of STET /Telephone Company of Italy/ large urban centers). Siemens is also competing for the same orders. Let us recall that in the private sector, STET is negotiating with IBM an agreement that would counterbalance that reached between ATT and Olivetti.
4. Addressing the 26 countries of the CEPT /European Conference of Post and Telecommunications Agencies/ including the Federal Republic of Germany, the DGT is playing on the sensitive chord of the proposals approved during the most recent meeting in Paris (see ELECTRONIQUE ACTUALITES of 27 January 1984) and in particular on the establishment of common telecommunications standards. Let us note that a technical committee of the CEPT will meet on 6 and 7 March 1984 to study a work plan on the specification of standards proposed by France.

#### CGE-Thomson is a Pre-Merger Situation

The attraction of the European market is not new. It so happens that the present trend toward deregulation and especially the increasingly high cost of projects open more favorable prospects for France. The CGE-Thomson /General Electric Company-Thomson/ consolidation perhaps facilitates the conclusion of agreements with various European partners (Plessey in Britain; Italtel, a STET affiliate, in Italy; and so on).

The two French manufacturers are now at the pre-merger stage of their telecommunications operations. And while the ALCATEL-Thomson organization is complex (an effort was made to maintain a semblance of balance by involving executives of the two groups at all levels), the reason for it is laudable: There was undoubtedly an intention to take advantage of the expertise of everyone concerned and to avoid "traumatizing" the terms. However, after 6 months of effort, a joint international strategy has been elaborated, the international teams have been consolidated in a single structure (Telinter), an ALGATEL-Thomson Development Center has been established (which will assume responsibility for systems design and the coordination of all new products and those being developed), and a products policy has been drawn up (with the plan submitted to the EEC) focusing on the E-10, MT-20/25, and the E-10S.

Furthermore, the projected volume now being computed should be translated, in terms of orders, into a goal of 13 to 14 million equivalent lines (including 5 million lines abroad) for the 1984-88 period. This goal goes not include projects in the United States which target, within 5 years, sales on the order of those being made in France now.

Besides Europe (in the bailiwick of the Ministry of Post and Telecommunications) and projects to be identified in the United States, ALCATEL-Thomson is now negotiating an important contract in China (with the support of the PTT). During a PTT-DIELI /Ministry of Post and Telecommunications-Directorate of Electronic and Data-Processing Industries/ visit to China in December 1983, an Agreement was signed complementing the one made in Paris between Laurent Fabius and the Chinese deputy minister of electronics industry. It calls for the supply of 500,000 telephone lines, an assembly line to produce switches, a manufacturing plant to turn out integrated circuits, a plant to produce connectors, and a research center for integrated circuits. In this context, the French offer bears on the E-10S with a CSN guided by a "68,000" computer (instead of an Intel microprocessor), independent of the decision taken to substitute for the users' card software, the "6809" computer (also produced by Thomson) for Intel's "8051" computer.

2662  
CSO: 5500/2616

FRANCE

ELECTRICITE DE FRANCE AWARDED SUBMARINE COAXIAL CABLE CONTRACT

Paris LE NOUVEL ECONOMISTE in French 27 Feb 84 pp 62-63

[Excerpt] Cable or satellite? At a time when space is in full sway, the empire of the seas strikes back. In Singapore, the Telecommunications managing boards of 20 countries have given the green light to one of the most extensive submarine cable projects in the world, one which, beginning with February 1986, will link the European telephone network with that of Southeast Asia. It is a gigantic undertaking: 5 years of negotiations, 14,000 kilometers of cables under the Mediterranean and the Indian Oceans, 408 million dollars in investment.

A nice windfall for French industry, for even if the Japanese NEC, the British STC and the German Siemens have each been awarded a portion of the project, the five remaining have been assigned in a lump to Lyon Cables and CIT-Alcatel. The total amount represented by this contract and going to these two subsidiaries of the CGE [expansion unknown] is 250 million dollars.

"With this contract, the work schedule of the Calais plant is assured for two years," say M Raymond Neguin, manager of the "Submarine Cables" division at Lyon Cables. The use of a simple method of laying the cables, moderate investment, regular improvement of performance: these are three factors that make it possible for this industry, which is already old, to maintain its course in spite of the deluge of new communication techniques.

In 1957, one submarine cable handled 80 telephone circuits at the most. Today the 3,000 circuits are scanned with the traditional coaxial cables. The replacement of the latter with optic fiber will soon multiply this capacity by five: between Corsica and the continent by 1985; between Europe and the United States beginning with 1988.

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CSO: 5500/2612

FRANCE

BRIEFS

POSTAL/TELECOMMUNICATIONS CENTER INAUGURATED--Officially established since 22 September 1983 the Postal and Telecommunications Study Center (SEPT) was inaugurated yesterday at Caen by Louis Mexandeau. Its director, Paul Deligne, formerly general administrator of the World Data Processing Center, has already put together the nucleus of the team that will work with him. This national center, which is shared by the postal and telecommunications services, will carry out research in the fields of automated banking and mail. In the first of these areas, SEPT will study possible multiservice computer cards and their uses, as well as home banking services in connection with the needs of postal financial services. Caen is, moreover, one of three cities in which the "memory card" is being tried out. One of SEPT's objectives thus will be to bring the systems into harmony with each other and to adapt them to the needs of users. With respect to automated mail, it will concern itself with proposed services and systems for business firms that would facilitate the composition of documents, their distribution inside and outside the firm, their classification, filing and printing. Additionally, it will be responsible for the further development of automated transmission of mail. Having recruited 30-some people in 1983, this center will now be hiring at a rate of 60 a year. Normally, it will be manned by 500 salaried personnel. These will be high-level people, with professionals constituting 40 to 50 percent of the total. If only for that reason, the operation is important to Caen, which must strengthen its tertiary activities and attract businesses capable of carrying on activities that would replace the traditional ones. Furthermore, two companies (SLIGOS and COMELOG) have just taken advantage of the opening of SEPT to announce the establishment of offices at Caen. It may be supposed, moreover, that there will be exchanges of information between this center's engineers and computer specialists, on the one hand, and the university, on the other, and that the establishment of this center will facilitate the granting of a degree in computer science. [Text] [Paris LES ECHOS in French 7 Feb 84 p 10] 12336

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IRELAND

OPERATIONS OF LOCAL RADIO STATIONS ADDRESSED

Dublin IRISH INDEPENDENT in English 5 Mar 84 p 5

[Article by Tony O'Brien]

[Text] The planned local radio stations must be run by the local community, and not by profiteering businessmen.

And there must be strict controls to ensure local radio is not confined to the larger population centres to the deprivation of smaller towns, villages and rural areas.

So says the National Association of Community Broadcasting, urging there be a clear distinction between local radio and local community radio.

In an information pack designed to assist groups interested in starting a radio station it adds: "We also wish to see a clearer understanding of the difference between local ownership and local democratic ownership."

The association insists that "control and direction of local radio must be from the grassroots." This could best be achieved by ensuring the individuals and organisations which make up the community have first option on licenses to operate a local community radio, it declares.

The requirements of people could be served best by radio where the people themselves were making a major input into the programme planning and output. And the association was concerned to ensure that any new development in radio purporting to be local should not merely result in only the large cities and towns being served.

Proposals by Communications Minister Mr Jim Mitchell in his Local Radio Bill envisage up to 30 stations around the country.

Recently, however, he has suggested there might only be six or seven main stations to serve the bigger areas of population.

The Association, which provides advice and help to community-based local radio projects, says that if local radio is to respond in the manner anticipated by the Minister, then it must be seen as an extension of public service Broadcasting, rather than as a means of commercial gain.

"There are grave doubts that local commercial radio could ever reconcile its essential commercialism with real community broadcasting," it argues.

Local community radio implied a different, and closer relationship between broadcaster and listener.

It could "rejuvenate community life by keeping people in touch, making them proud of their locality and more willing to participate in local affairs."

Local radio, it maintains, should:

- Serve recognisable local geographic communities;
- Ensure democratic ownership and control rests within the community;
- Have a commitment to use the profits for community development work;
- Be run by a committee representative of the people;
- Endeavour to transmit material that is predominantly locally originated, and
- Ensure the Irish language and culture are adequately represented.

The N.A.C.B. information pack suggests interested groups could either form a special co-op to run the station or use the existing community council.

CSO: 5500/7520

IRELAND

BRIEFS

SATELLITE TV PLANS--RTE and Telecom Eireann are among some 26 groups who want to develop an Irish satellite TV service, it emerged last night. Today is the final date for interested parties to have submitted outline proposals to the Department of Transport. Consortia from the US, Canada, UK and Germany have expressed an interest, along with no less than seven Irish companies. The Government has already been approached about sharing the cost of the direct broadcasting satellite with Britain with which it would share the same airspace. Final proposals for setting up a Direct Broadcasting Service have to be in by July 31. But it is understood that RTE will have a significant role to play in the new five-channel service which will be beamed into homes in Britain and parts of the Continent. Although the Department will do most of the work of deciding what groups should become involved in the service and what format it should take, any final decision on whether to go ahead with the proposal would have to be taken at Government level. In 1977, the World Administrative Radio Conference allocated each country with five transponders, and it has already been reported that the UK television networks are anxious to share the costs with other operators. Communications Minister Jim Mitchell has shown considerable enthusiasm for the satellite breakthrough. [Text] [Dublin IRISH INDEPENDENT in English 29 Feb 84 p 7]

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SWEDEN

GOVERNMENT BROADCASTING MONOPOLY BREAKUP CREATES PROBLEMS

Stockholm DAGENS NYHETER in Swedish 29 Jan 84 p 10

[Article by Cecilia Steen-Johnson]

[Text] A painful adjustment is in store for Swedish Radio. The threat is now coming from space, sharp cutbacks, and the breakup of its monopoly. What does this mean for us ordinary viewers? Is there interest in having perhaps 20 or 30 new channels--or will we turn our backs on that abundance of TV?

The electronic precipitation of TV programs from satellites has been drizzling over Sweden for the past few years. And the rain will be falling more heavily toward the end of the 1980's, because 12 TV channels from various European companies will be available to Sweden--or at least its southern and central areas--by then.

Visionaries wielding various degrees of power are rejoicing over the maximum freedom of choice this will provide for Swedish TV consumers, who are currently starving on the dreary gruel supplied by the two domestic channels. There is delirious talk of 20 or 30--nay, even 40--channels being within reach.

The fact that this freedom of choice is also going to cost money is mentioned more quietly. It is made to sound as though all those delights are free and as though it is merely a matter of giving the poor man the right spoon--of investing in the right technology--to keep us from being left hopelessly behind.

The danger that Swedish culture will be ruined by the acid rain represented by such an abundance of electronic foreign precipitation has been discussed from time to time over the past 10 or 15 years. At the moment, it is the individual's freedom of choice that is being valued most highly--a sign of the times.

The cultural participants in the debate seem for the moment to have given up in the unsteady glare of video.

For Sweden's impoverished radio corporation, the immediate future means a painful adjustment, mental as well as otherwise. With its four subsidiaries--Swedish Television (SVT), National Radio (RR), Local Radio (LRAB), and Educational

Radio (UR)--the group still has a monopoly on the airwaves, but that monopoly is becoming increasingly hollow.

And soon it is going to collapse.

Mourned by Few

Technical developments are making it hopeless in practice to give even the appearance of preserving Swedish Radio's monopoly position. On that point, electronics are forcing changes in Swedish cultural policy, subsection media policy.

The monopoly is falling to pieces and will disappear no later than 1986, to be mourned by few. It is now up to Swedish Radio--group management, board of directors, and subsidiaries--to come up with a competitive programming policy for the future despite declining funds. More later about how ideas on that subject are taking shape.

But first, let us take a look at what may happen--if we can afford it, if we want wide freedom of choice, and if the curves are being extrapolated correctly.

Several Want in

Today it is possible for anyone who is handy with equipment and has a few thousand kronor to pick up TV programs from the satellites whose broadcasts cover Sweden.

The next step will be to make it possible for the majority to receive foreign TV broadcasts. That will require:

1. Changes in the law.
2. Cable systems to households.
3. Receivers and decoders for every unit in the cable system.

A great many interested parties are currently jostling for attention and a place in line for the virgin market that will soon open up--if the hopes come true.

Most hopeful is the National Telecommunications Administration, which sees a bright future with cable as its dream, and it is joined by Ericsson and others in the industry. An optical-fiber cable system opens up tremendous possibilities for two-way electronic communication--with computers, for example.

The National Telecommunications Administration wants the monopoly on that system.

Unrealistic

Cable TV is no doubt primarily the gumdrop being used as enticement--an understandable minor benefit that will make the entire giant project easier to sell.

If the entire Swedish population were hooked up to an optical fiber system, the cost of taking it to the smallest farm in the forest and every last skerry could come to 100 billion kronor. That is inconceivable.

On the other hand, it is realistic to take cable to households in the big-city areas. That would take in nearly 70 percent of the population at a reasonable cost of 5 or 10 billion kronor. It would also provide a long list of useful functions for banks and alarm systems, for example--and satellite TV, of course, if the individual wants it and is willing to pay for it.

#### Not Entirely Free

It is estimated today that the net cost of programming per household for the two or three channels now within reach up in the sky would be about 100 kronor per month. Added to that would be the household's cost for the cable system, which would vary from just over 100 kronor per year in rental costs to several thousand kronor in investments, depending on where one lives.

That abundance of TV is not free. Moreover, it carries no subtitles--it is broadcast in English, French, German, Dutch, Russian, and so on.

There are great possibilities for local Swedish broadcasts via cable as well. Here the Pentecostal Church is the first to show an interest. It is expecting a lot from salvation by cable.

But there will be no cable system in the near future unless there is enough interest in TV from the sky. Eventually, say by the end of the century, the cable system will be installed as the result of a gradual process, but the National Telecommunications Administration and other interested parties want it to arrive sooner. That is why they are running tests in Lund and Goteborg now to ascertain the level of interest--and to create favorable opinion.

#### Wanting Different Things

This is where industrial policy and media policy cross paths. And standing in the crossroads is Swedish Radio, with its announced cutbacks and shortage of programming funds and its executives wanting to pull in different directions.

No one wants to lay a finger on Swedish Radio's function as a public service enterprise. Parliament's guidelines on programming policy will probably stay the same for the foreseeable future. The rain of satellite programs over the country will probably not provoke Swedish Television into becoming more streamlined and international, and perhaps there are people who regret that fact.

#### Schein not Afraid

Harry Schein, Swedish Radio's new chairman of the board, is not afraid of the satellites. Swedish Television has the obvious advantage of speaking Swedish. At least most of the time. But a real effort to make its activity more effective is needed.

Lean days are ahead for TV in particular, where the imposed economies have meant that the personnel budget is taking a fast-rising share of the money. There will not be enough left over to produce programs with. About 500 jobs will have to be eliminated.

The TV organization will have to be made more flexible. It is currently unwieldy, expensive, and suffering from an excess of paperwork. There are furtive glances in the direction of the BBC, which uses a single unit for program production, as the basic pattern to follow, with two organizations for distribution--one for each channel.

There are also ideas about building an image for each channel--giving each its own character--and eliminating competition between TV1 and TV2. One channel would be the national channel, with an emphasis on informative programs, debates, theater, and so on. The other channel would have more input from the districts and also be lighter in character. This would require changes in the agreement with the government.

Thought is currently being given to these possibilities at the same time that severe cutbacks are being made to cope with tougher times. And there is great bitterness toward Parliament, which is refusing to increase TV license fees.

TV advertising may be a solution, at least as a quick fix. That step was suggested by Orjan Wallqvist, managing director of the Swedish Radio group, last week. Eyebrows were lifted in irritation in many quarters. The Social Democrats are not likely to reconsider their attitude toward TV advertising, at least not as long as Bengt Goransson is minister of culture.

Instead of that, TV head Sam Nilsson wants to attract fresh money with pay TV in the form of a third channel that can be yours for 80 kronor per month. This would not take plums from people's TV, but would offer a few extra cherries instead. The third channel would stand on its own economic legs while remaining part of Swedish Television. But many people doubt strongly that any money would be left over for the regular channels.

How much TV people will be able to consume is an almost unknown factor in this whole complex of media policies for the future. There is not much room for increased consumption--only enough for marginal changes and some shifting about. It is on those changes and rearrangements that the battle will center.

#### Parsimonious Parliament

Swedish Radio obviously does not feel that the threat is from above. If anything, it sees the threat coming from Parliament, which is being stingy with cash. Satellite TV's encroachments in Swedish airspace are not causing alarm, although there are probably those who would like to see a better stirring of the Swedish TV pot. Bengt Goransson is taking it calmly. He says that humanism is making a comeback and that books and personal cultural activity are becoming more important than synthetic human relations via TV.

And what about wood-burning radio? Well, fortunately, it does not have to worry about the technical visions of the big boys--although it is also possible, of course, to transmit radio by cable.

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